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(54) **System for limiting IF variation in phase locked loops**

(57) An apparatus for limiting intermediate frequency variation in a multiple conversion phase locked loop (18) includes a reference oscillator (20) and a voltage controlled oscillator (VCO) (24). The reference oscillator (20) generates a first reference frequency, (f_{rosc} ; f_r), while the VCO (24) generates an output frequency. The output frequency is divided by a first VCO divider (26) and mixed with the first reference frequency to generate

a first intermediate frequency (f_1). A second VCO divider (34) also divides the output frequency and mixes it with the first intermediate frequency (f_1) to generate a second intermediate frequency (f_2), which is filtered and used to control the VCO (24). An algorithm processor (44) generates the division constants (N_1 , N_2) of the first and second VCO dividers (26-34) as a function of the reference frequency (f_{rosc} ; f_r), and the output frequency to limit intermediate frequency variation (Fig. 2).

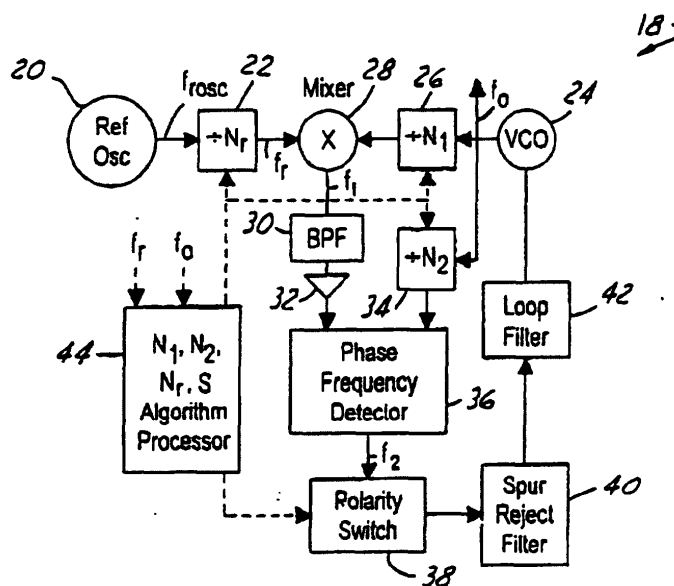


FIG. 2



European Patent
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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.7) H03L
Place of search MUNICH		Date of completion of the search 16 January 2004	Examiner Kahn, K-D
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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